

Operation of Test , Evaluation and Acceptance in a Commercial Environment

by

Chris Stonehouse

Managing Director Facilities

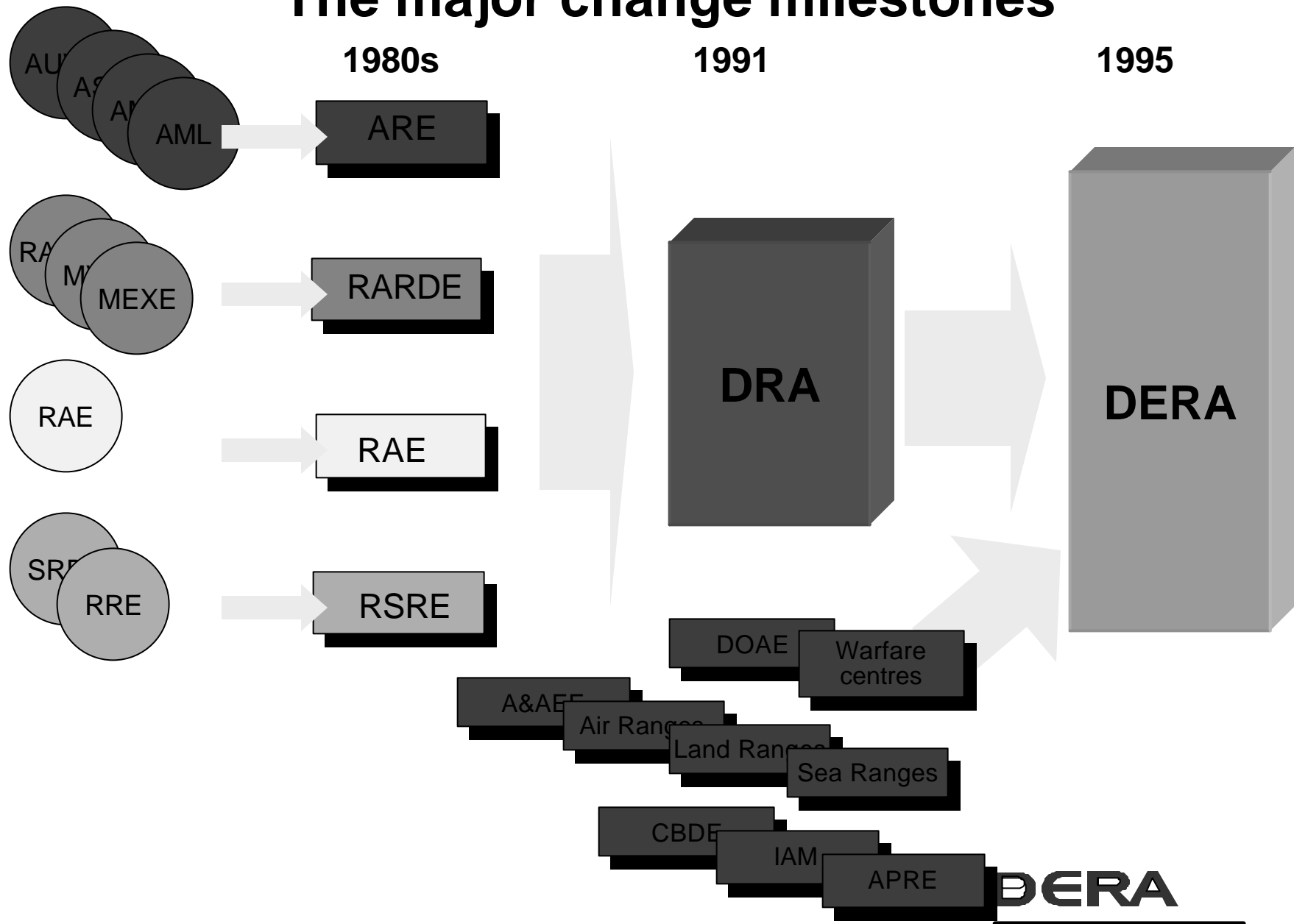
Defence Evaluation and Research Agency (DERA)

DERA

DERA Mission

**‘To harness science and technology to
UK defence needs’**

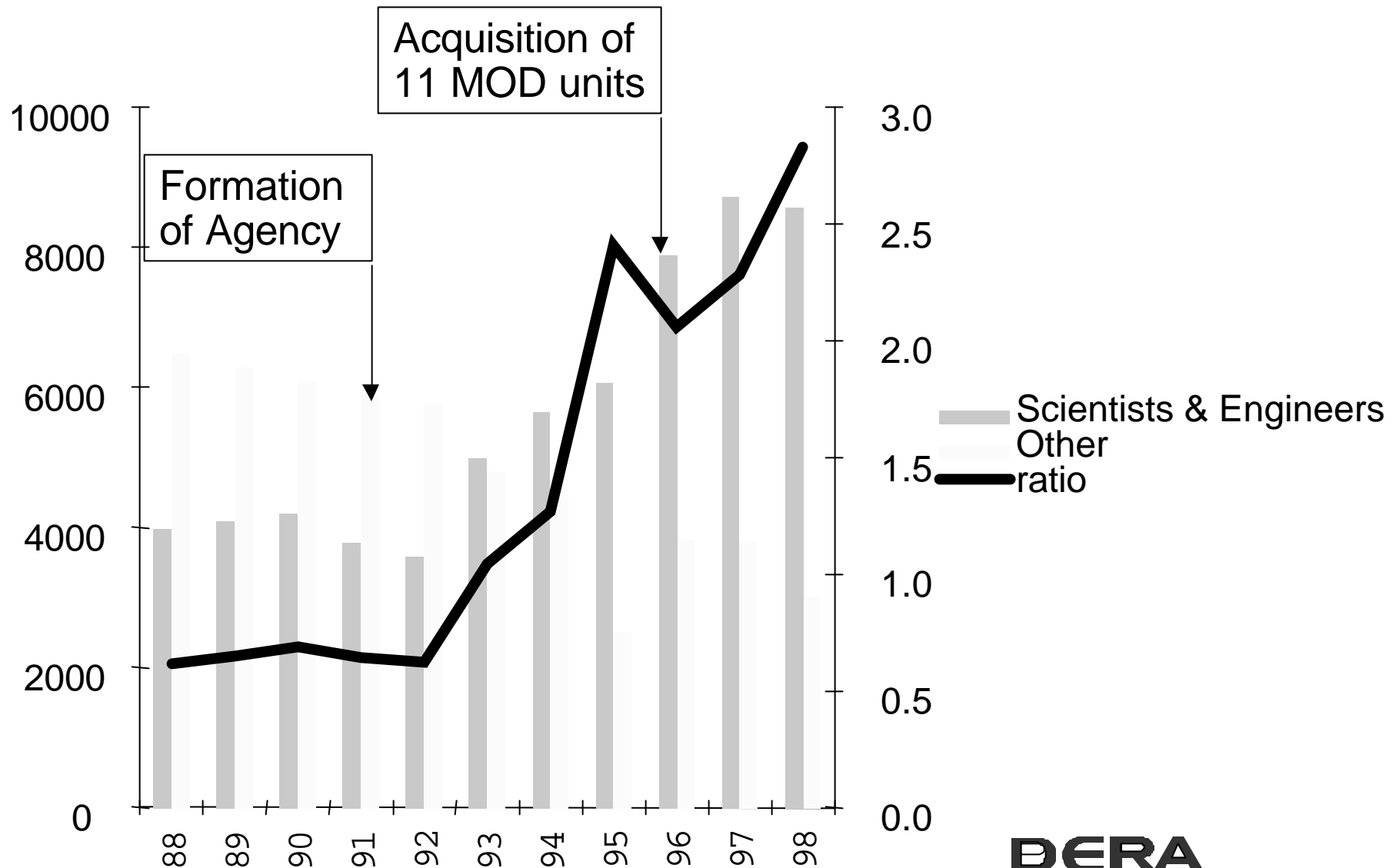
The major change milestones



Reform of infrastructure

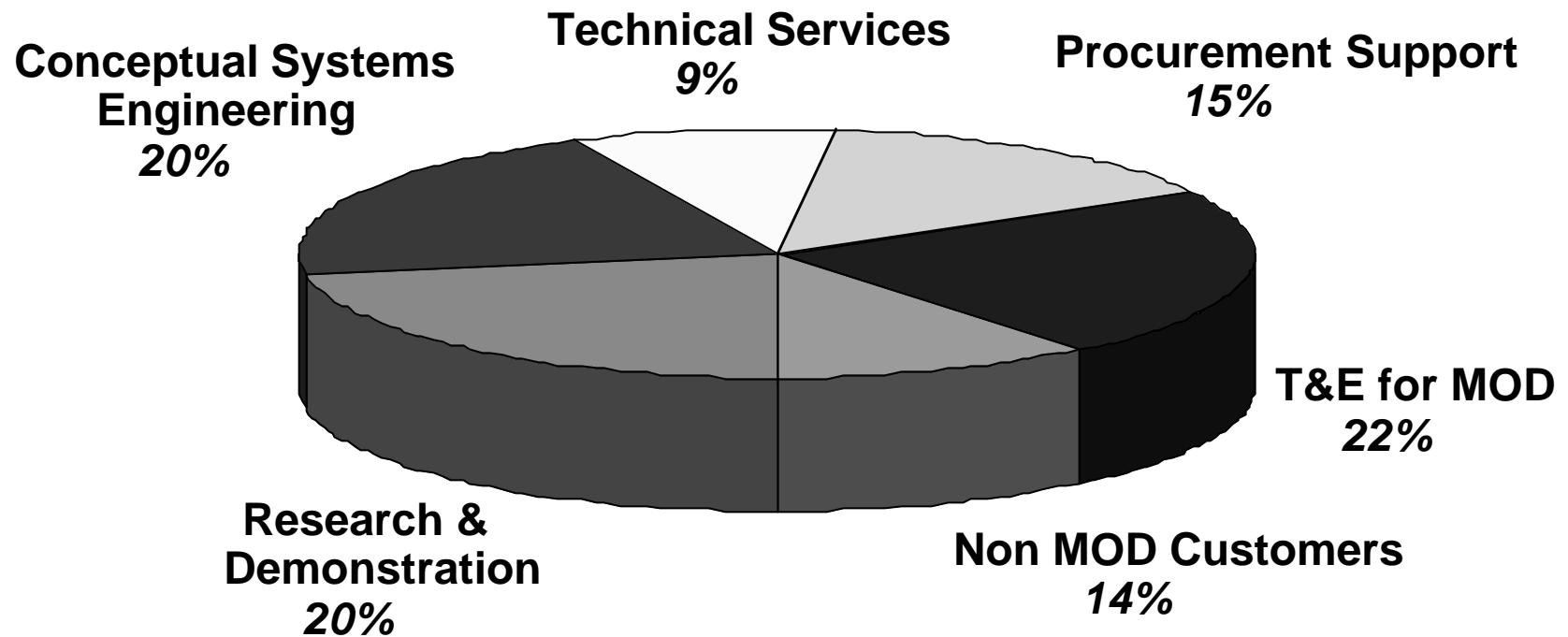
- inherited more than 80 sites, including 40 significant laboratory complexes
- much of infrastructure run down and uneconomic
- phase 1 closed 19 laboratories, built 13 new ones
- subsequent investment included major new build at Porton Down
- Phase 2 investment just starting will reduce major facilities down to just 4 clusters plus the T&E Ranges

Reform of Teeth to Tail Ratio

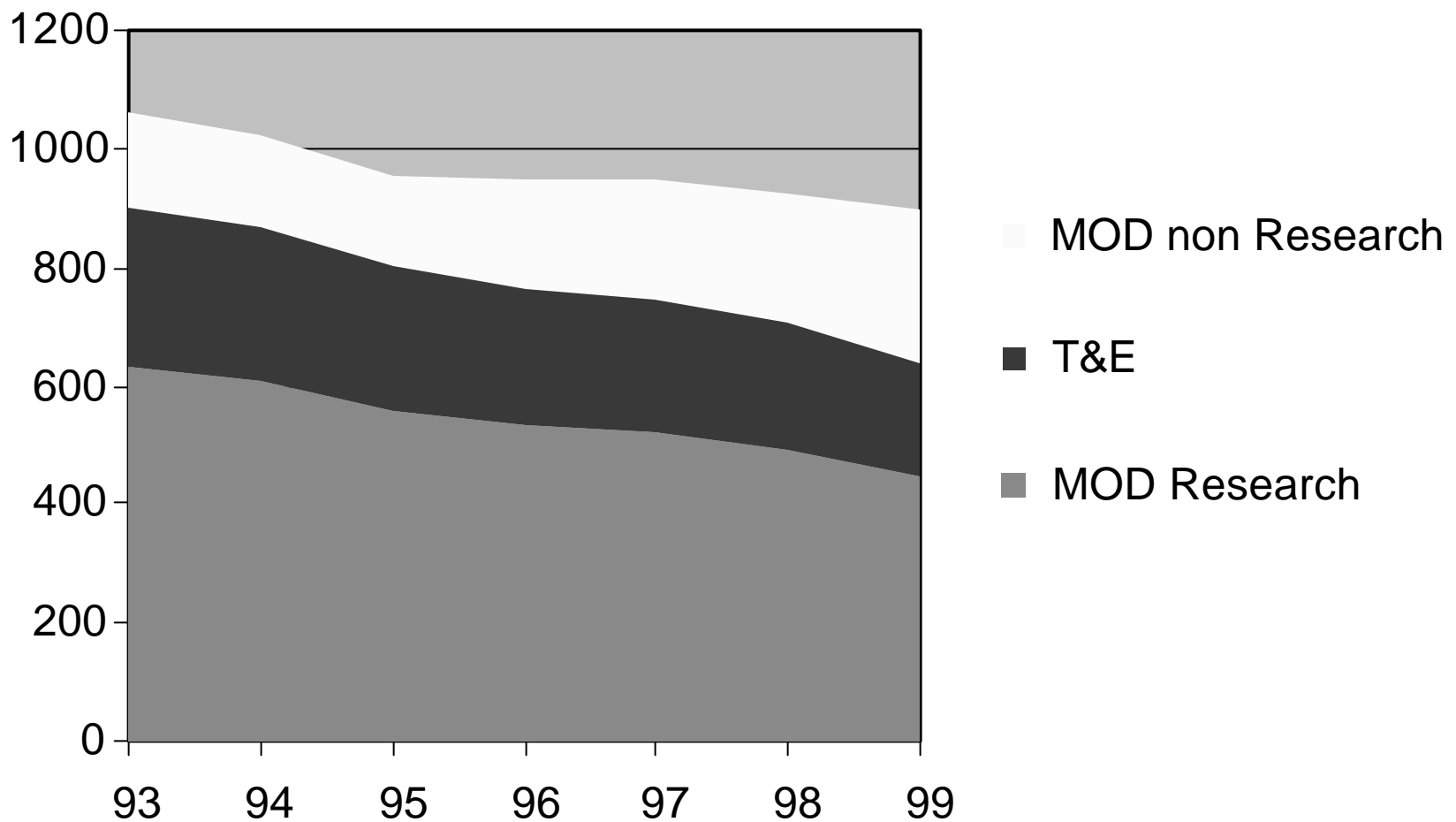


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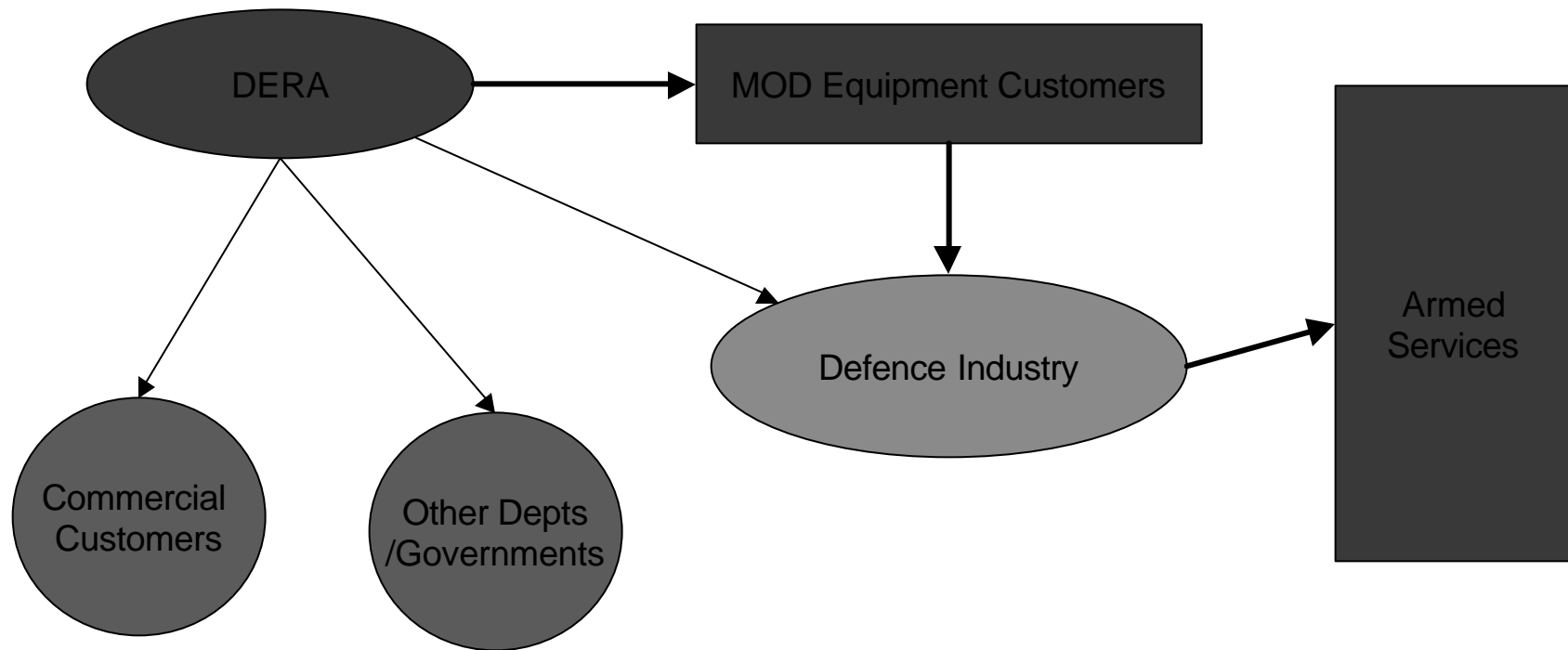
Analysis of Business by Service



MOD Income



DERA copes with the decline in research funding by exploiting capabilities in other directions



- And this enables MOD to benefit from having access to a capability greater than it can afford on its own

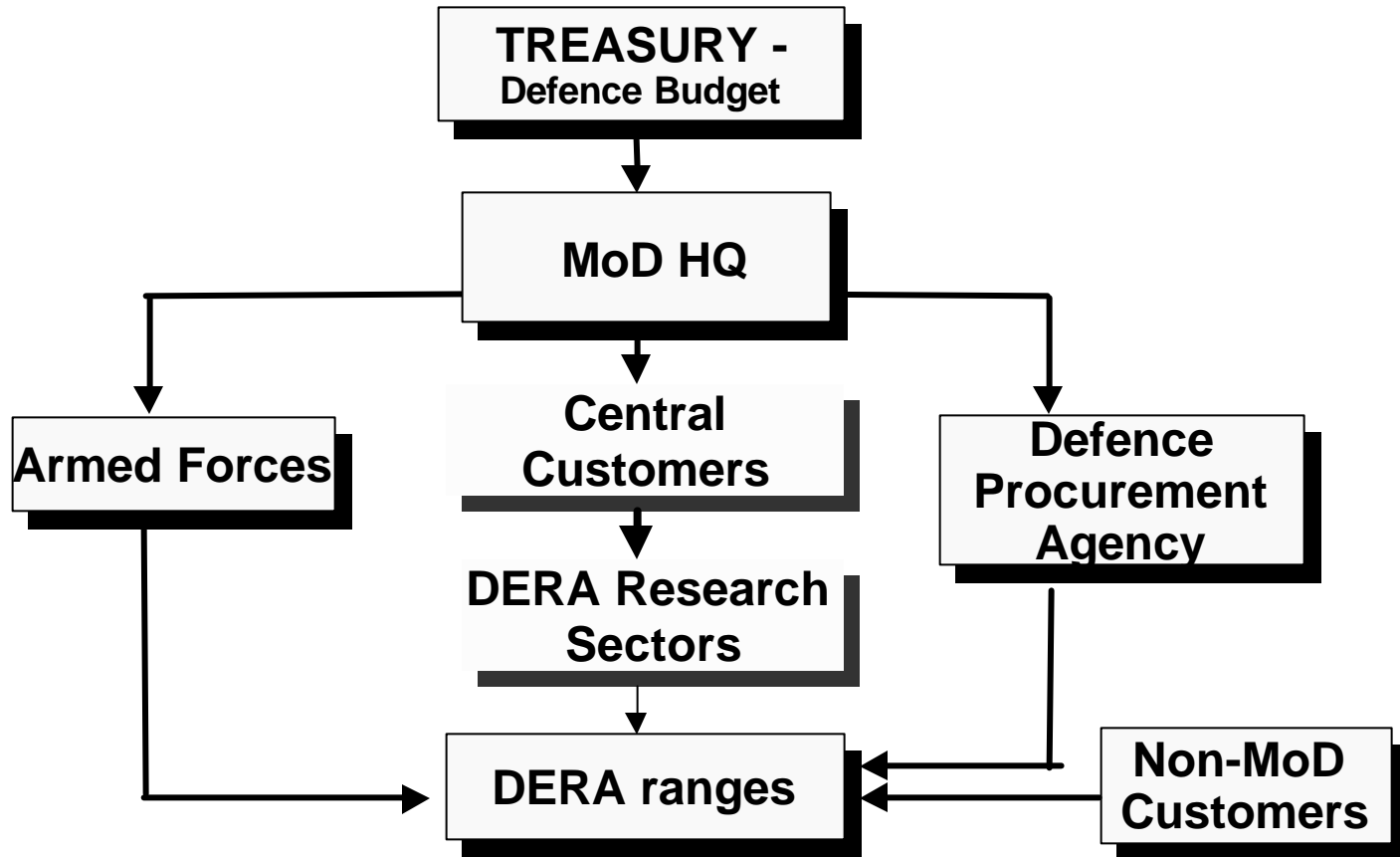
DERA Ranges

DERA T&E ranges



DERA

Funding arrangements after 1995



DERA

Contributing to customer's success

“ provide independent range-based test, evaluation and training solutions for defence needs ”

- design and management of T&E and training
 - using own facilities
 - using another organisation's facilities
 - UK
 - Overseas
 - or a mixture of both

Meeting future challenges

- Partnerships with customers
- Investment in Ranges capabilities
 - people and facilities
- T&E supply side partnerships

greatly enhances value for money

Partnerships with customers

- long term relationships with customers
- really understand the customer future needs
- joint planning for the provision of T&E and training solutions
 - what is needed
 - when it is needed
 - where it is needed
- gives Ranges confidence to invest

we can then provide most cost effective solution

Partnerships with customers - strategic facilities

- Retention of essential facilities and capabilities
- Ideally - all facilities cover their costs from income derived customer work

... however, some facilities have periods of low use and hence little income

- MoD Steering Committee decides if these facilities are strategic
 - if so then customer pays DERA to maintain and keep them available
 - if not, the DERA decides on business grounds whether to keep or close facility
- Steering Committee meets twice a year

Investment in Ranges capabilities

- multi-skilled staff
 - training and development
- network staff across ranges
 - manage staff in capability groups (not by ranges)
 - mobility - 'helping out at other ranges when they are busy'
- Investment in facilities
 - new requirements
 - more efficient operation
- sharing facilities across ranges
 - mobile and multi-purpose instrumentation

major reductions in cost

Supply side partnerships

- Trusting partnerships with suppliers of complementary capabilities
- work with partners to meet our customer's requirements
 - joint planning
 - long term
- Range support suppliers
 - underpinned by taut contracts
- National and international suppliers of range T&E capability
 - underpinned by MOUs or other agreements

provide complete service (One Stop Shop) service

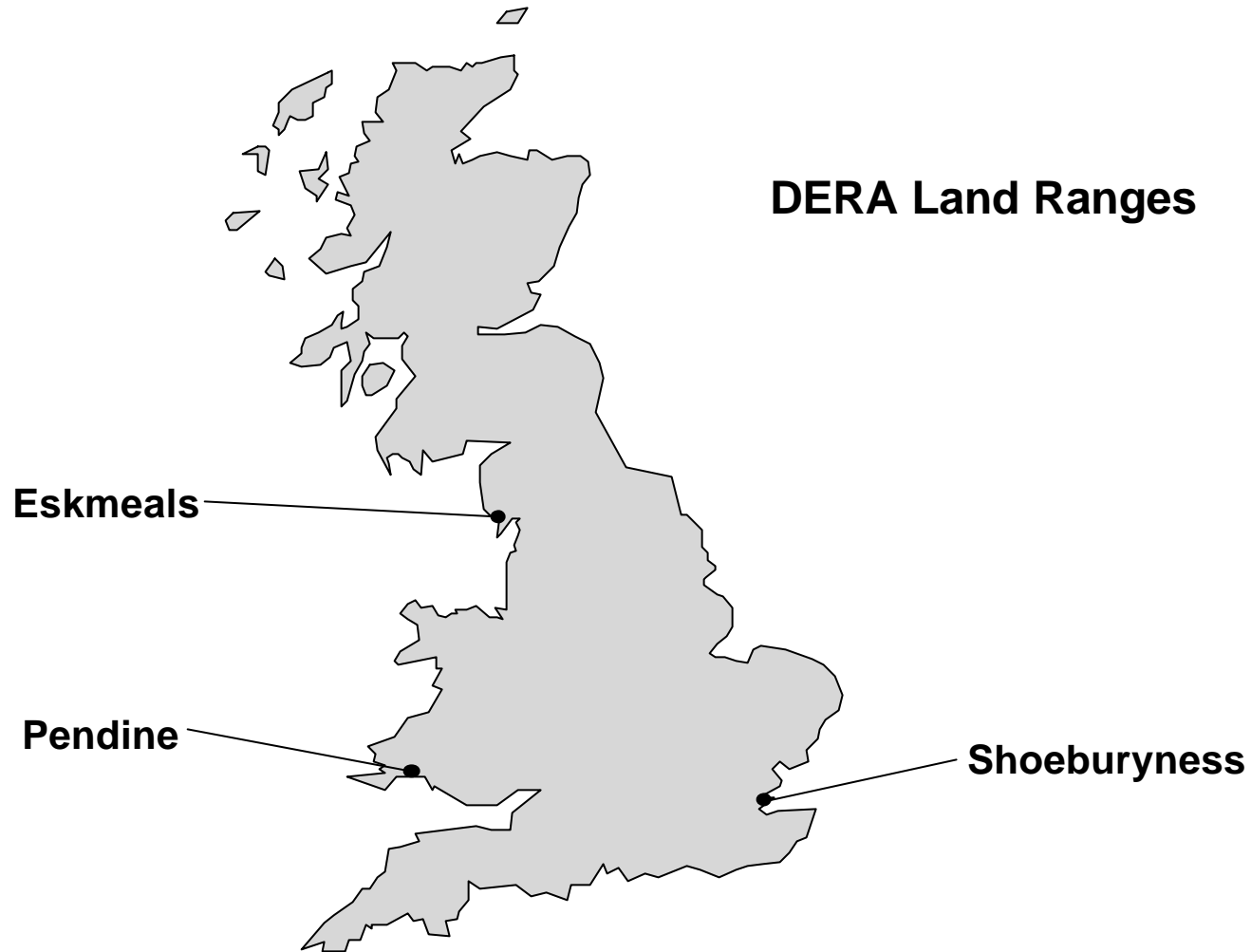
UK / US MOU

- Covers mutual use of each other's test facilities
 - Includes portable equipment, being used independently of test range
- Main features:
 - priority access
 - data confidentiality
 - protection of Intellectual Property Rights.
- Exemption from Foreign Military Sales requirements
- Supports use of other nations' test facilities for back up
 - Reduces need to hold large stock of spares.

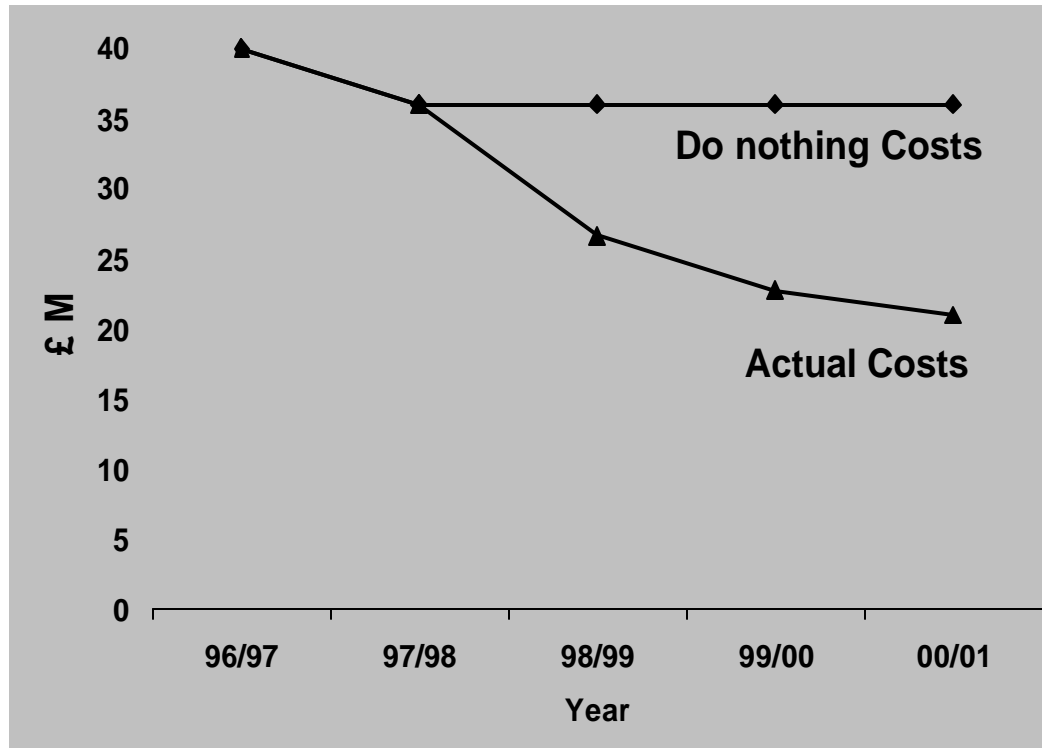
MOU Progress

- Modern MOU began in June 1997 with International Test and Evaluation Steering Committee of ITOPs
 - extended own remit to look at international collaboration for T&E facilities.
- Based on Western European Armaments Group (WEAG) MOU being used by UK.
 - Allows similar arrangement for UK and US co-operation
- Technical & commercial details agreed in early 1998
 - Action to run US MOU generator now with USAF T&E Office
- Next progress meeting April 2000
 - Good progress expected

Application of new management approach



Land ranges - costs



- No loss in capability
... only reduction in capacity
- all 3 ranges still in use
- Job reductions:-
713 to ~ 200
- well focussed highly skilled teams

Integrated Test Evaluation and Acceptance (Smart Acceptance)

“Acceptance is a critical stage in the procurement cycle, and therefore needs to be rigorously managed. If properly applied, Smart Acceptance should alleviate many of the problems identified in my report”

Sir John Bourn, 11 February 2000.

with reference to a National Audit Office report

Ministry of Defence: Accepting Equipment Off-Contract and Into Service

Integrated Test Evaluation and Acceptance (ITEA) - Policy

- UK T&E organisations have lead development of “Smart Acceptance”
- DERA T&E sectors working with RAF Air Warfare Centre and Tri-Service Acceptance Group to integrate Development T&E (DT&E) and Operational T&E (OT&E) to provide a coherent service to Capability Managers and Integrated Project Teams
- DERA Aircraft T&E Sector drafted ITEA planning procedures for the MOD Acquisition Management System
- Process to initiated as part of IPT “break-through”

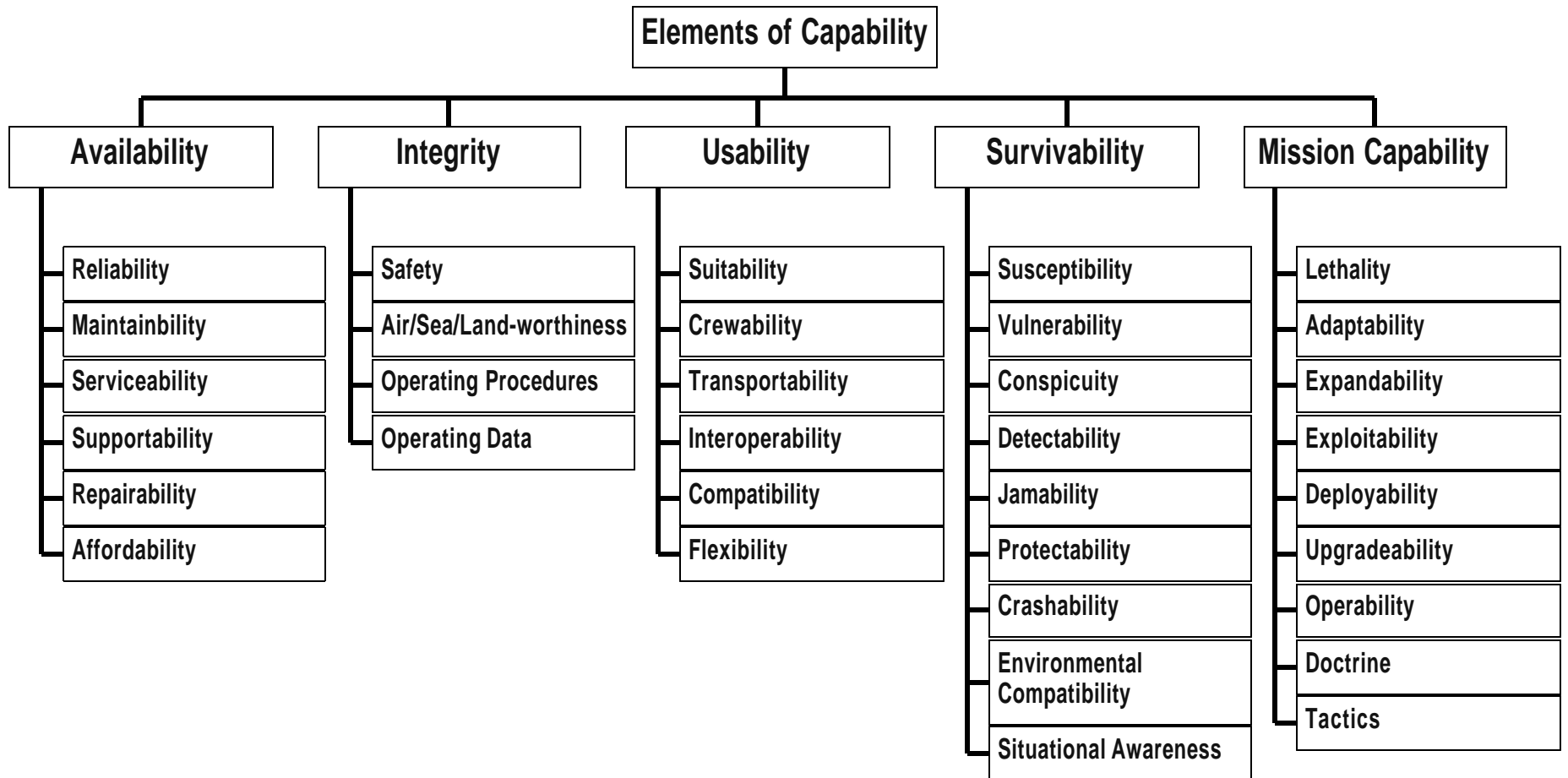
Integrated Test Evaluation and Acceptance (ITEA) - Implementation

- DERA System Engineering approach to Evaluation and Test
 - Integrated multi-discipline
 - Cross boundary
 - Through-life from inception to disposal
- Supported by internal capability development
 - **Enterprise** development, including planned major internal reorganisation
 - **Methods** development, particularly 'Synthetic T&E'
 - **Staff** development, through training and recruitment

Through Life T&E

- Provides information and evidence to:
 - confirm achievement (acceptance)
 - inform the future (assurance)
- Efficient through-life T&E:
 - planned, co-ordinated and integrated approach
 - data/knowledge warehousing
 - reusable models
 - joint testing
 - managed facilities
- T&E requirements are driven by:
 - decision-maker stakeholders and their requirements for evidence from the T&E process
 - requirements for military capability

Through Life T&E



Through Life ITEA Plan

- Component of Through Life Management Plan
- Objectives:
 - support capability acceptance
 - enable system acceptance and assurance
 - validate integrated system safety model
 - develop capability
 - rationalise technology insertion
 - measure training
 - provide feedback (capability & system)

Through Life ITEA Plan

■ Key Components:

- Test articles / Test systems / Test facilities
- Resources / Management / Authority
- Test Activities
 - Research
 - Technical demonstration
 - Safety of design
 - Development/compliance
 - Safety in role
 - Operational capability
 - In-Service operations:
- Safety / Interface / Logistics / Contracts etc

21st Century challenges

- the MOD value chain is radically changing
 - the new procurement process will require technical support in quite different ways
 - DERA's place will have to be earned, not assumed
- the defence industry is industrialising technology and internationalising
- In the real world technologies with economic leverage are moving much faster than MOD processes can track
- We need fresh way of working a Public Private Partnership?